IETF 90

SDP Attributes Multiplexing

draft-ietf-mmusic-sdp-mux-attributes

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London Recap :

2 Open Issues:

Analyze Payload Type scoped attributes

Analyze Encapsulating Attributes

PT Scoped Attributes :

Category: IDENTICAL-PER-PT

Attributes that define the RTP payload configuration on per Payload Type basis and MUST have identical values across all the media descriptions for a given RTP Payload Type when repeated.

Example:

rtpmap, ftmp parameters match exactly for PT 97

m=video RTP/SAVPF 56302 96 **97**

a=rtpmap:96 H264/90000

a=fmtp:96 profile-level-id=42400d; max-fs=3600; max-fps=3000; max-mbps=108000; max-br=1000

a=rtpmap:97 H264/90000

a=fmtp:97 profile-level-id=42400a; max-fs=240; max-fps=3000; max-mbps=7200; max-br=200

m=video RTP/SAVPF 56302 **97**

a=rtpmap:97 H264/90000

a=fmtp:97 profile-level-id=42400a; max-fs=240; max-fps=3000; max-mbps=7200; max-br=200

PT Scoped Attributes :

framerate*

ptime*

maxptime*

rtpmap

ftmp

framesize*

imageattr

depend lay

depend mdc

* → more on it coming soon

PT Scoped Attributes (Open Issues)

a=rtcp-fb :

Should this be NORMAL or IDENTICAL-PER-PT ?

a=framerate, a=framesize, a=ptime, a=maxptime :

Should this be IDENTICAL-PER-PT or SPECIAL or a new category ?

a=fec-flow, a=fec-repair-flow, a=repair-window :

Should this be NORMAL or SPECIAL or IDENTICAL-PER-PT ?

Encapsulating Attributes :

Category: INHERIT

Attributes that encapsulate other SDP attributes and their multiplexing characteristics are inherited from the attributes they encapsulate.

Example:

m=video RTP/AVP 56302 100

a=rtpmap:100 VP8/90000

a=sqn: 0

a=cdsc: 1 video RTP/AVP 100

a=cpar: a=rtcp-mux

m=video RTP/AVP 56302 101

a=rtpmap:101 VP8/90000

a=cdsc: 1 video RTP/AVP 101

a=cpar: a=rtcp-mux

Category **IDENTICAL** is inherited for **"cpar"** encapsulated attribute **rtcp-mux** when BUNDLED.

Encap Attributes(O/A) : Recommendation - Transport Capability

When a transport capability is proposed as a potential configuration under a given media description, it is recommended that all the media descriptions under multiplexing have the same potential configuration number for the given transport capability.

```
a=tcap:1 RTP/SAVPF
a=tcap:2 RTP/SAVP
a=group:BUNDLE audio video
m= audio ...
a=mid:audio
a=pcfg:1 t=1
a=pcfg:2
m= video ...
a=mid:video
a=pcfg:1 t=1
a=pcfg:2 t=2
```

Potential Configuration “1” for RTP/SAVPF transport capability is repeated.

Encap Attributes(O/A) : Recommendation : Attribute Capability

For attribute capabilities which are offered as potential configurations that encapsulate attributes whose value MUST be IDENTICAL under multiplexing, it is recommended that all the media descriptions under multiplexing have the same potential configuration number for the given attribute capability.

```
 a=acap:1 a=rtcp-mux
 a=acap:2 a=crypto:1 AES_CM_128_HMAC_SHA1_80
 inline:EcGZiNWpFJhQXdspcl1ekcmVCNWpVLcfHAwJSoj|2^20|1:32
a=group:BUNDLE audio video
m= audio 49172 RTP/AVP 99
a=mid:audio
a=pcfg:1 a=1
a=pcfg:2
m= video 560024 RTP/AVP 100
a=mid:video
a=pcfg:1 a=1
a=pcfg:2 a=2
```

Potential configuration “1” is repeated while referring to attribute capability a=rtcp-mux.

Recommendation : Attribute Capability (Shared PT)

For attribute capabilities which are offered as potential configurations that encapsulate attributes whose value MUST be IDENTICAL-PER-PT under multiplexing, it is recommended that all the media descriptions under multiplexing have the same potential configuration number for the given attribute capability.

a=creq:med-v0
m=audio 54322 RTP/AVP 96
a=rtpmap:96 AMR-WB/16000/1
a=fmtp:96 mode-change-capability=1; max-red=220;
mode-set=0,2,4,7
a=rmcap:1,3 audio AMR-WB/16000/1
a=rmcap:2 audio AMR/8000/1
a=mfcap:1,2 mode-change-capability=1
a=mfcap:3 mode-change-capability=2
a=pcfg:1 m=1 pt=1:96
a=pcfg:2 m=2 pt=2:97
a=pcfg:3 m=3 pt=3:98

m=audio 54322 RTP/AVP 96
a=rtpmap:96 AMR-WB/16000/1
a=fmtp:96 mode-change-capability=1; max-red=220;
mode-set=0,2,4,7
a=rmcap:4 audio AMR/8000/1
a=rmcap:5 audio OPUS/48000/2
a=mfcap:5 minptime=40
a=mfcap:4 mode-change-capability=1
a=pcfg:2 m=4 pt=4:97
a=pcfg:4 m=5 pt=5:101

Potential configuration "2" is repeated for the PT 97. Thus both the media capability 2 and 4 along with their media format capabilities MUST refer to the same Codec configuration , as per the definition of IDENTICAL-PER-PT.

Next Steps

Follow up on decisions made in Toronto.

Finish the “Security Considerations” Section.

Overall document cleanup.

Get ready for Last Call (Hopefully)